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ABSTRACT

A survey investigated the use of Electronic Networks for Interaction (ENFI) in composition programs, an approach using group real-time conferencing on computer networks. Real-time conferencing means that a group (from 2 to 20 participants) meets via computer synchronously and communicates in writing as a group (in one large group or in smaller sub-groups), thus shifting from spoken to written communication. Nine persons using ENFI at nine institutions were interviewed. Topics surveyed included uses of the network, class size, class participation patterns, technical support, campus infrastructure, and theory to practice. Results indicated that the four most important areas mentioned in the survey are: (1) administrative concerns; (2) caveats; (3) educational impact; and (4) implications for the field. (Two figures are included; an appendix contains the survey instrument with summary comments of results.) (SR)

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A Selective National Survey of ENFI Real-Time Conferencing in the Composition Classroom

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In the winter of 1989, I identified sixteen colleges and universities in the United States that use group real-time conferencing on computer networks in composition programs, an approach generally called "ENFI." (ENFI is an acronym for Electronic Networks For Interaction). Real-time conferencing means that a group ("group" meaning anywhere from two to more than twenty participants) meets via computer synchronously (at the same time) and communicates in writing as a group. In other words, the class shifts from spoken to written communication, either in one large group or in smaller sub-groups See fig.1 on page two for a list of the sixteen instituions.[1]

Since all of these initiatives in one way or another stem from the real-time conferencing work of the Gallaudet University ENFI Project begun in 1985, I call the work at these sixteen sites "ENFI" even though specifics of actual use vary widely.

For my survey, I was able to interview nine leading ENFI people at nine institutions: Lehman College (CUNY) in the Bronx, NY; the University of Texas at Austin, the University of Minnesota in Minneapolis, Elmhurst College in Chicago, Carnegie Mellon University, Northern Virginia Community College, New York Institute of Technology, Purdue University-Calumet, Ohio State University-Lima. This paper is based on these nine interviews. The questionnaire that formed the basis for the phone interviews is included at the end of this paper along with summaries of the findings and comments for each question.

Uses of the Network

The students involved with ENFI at the nine sites are mostly average freshman enrolled in composition courses although a few are basic writers and a few are skilled writers or major-level

[1] About ten other institutions use real-time conferencing with deaf students but these were not included in this survey since the learning goals and methods within deaf education tend to differ from those in general education. Also some high schools have adopted real-time conferencing but these, as well, were not included.

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students in a literature course. One teacher is teaching a graduate course using the network. Classes don't always meet in the computer lab nor even in the computer lab do they always meet on the network. The norm is to do some of the work each week on the network.

ENFI Sites Interviewed

Lehman College (CUNY)
University of Texas
University of Minnesota
Elmhurst College
Carnegie Mellon University
Northern Virginia Community College
New York Institute of Technology
Purdue University at Calumet
Ohio State University at Lima

ENFI Sites Not Interviewed

University of Southern Mississippi
Manhattan Community College
Parkland College (Chicago)
San Jose State University
Tulsa Junior College
Bronx Tech.
Ohlone Community College

Fig. 1. List of ENFI sites.

At the nine sites there were 1,230 students and 54 teachers involved this semester. At least two teachers used ENFI at every site; no site had fewer than thirty students involved this semester (see fig. 2, page 3). Also, no site has experienced a decline in numbers yet. Four of the sites plan to expand the number of ENFI stations; two expanded recently.

The ways the groups used the network are mainly for small-group collaboration, pre-writing activities (group invention work) or peer commenting. Respondents said they aimed at fostering a

process-focus, creating a writing community (social constructionism), developing meta-linguistic ability (commenting on writing) or encouraging "portable" skills (the students able to use writing productively without the teacher being present). At one site, ENFI was being used by an instructor in the Political Science Department for a Writing-Across-the-Curriculum class. She uses it once a week for group pre-writing activities.

Class Size

Importantly, at only two sites were ENFI classes any smaller than regular classes. At one of those sites, the disparity will cease in the fall of '89 and at the other the size difference is relatively insignificant, and is imposed on all computer classes, not just on ENFI classes.

Probably because ENFI classes are as large as regular classes, most sites mentioned small-group collaboration as a primary use. Trying to manage a large group in real-time written conversation is nearly impossible.

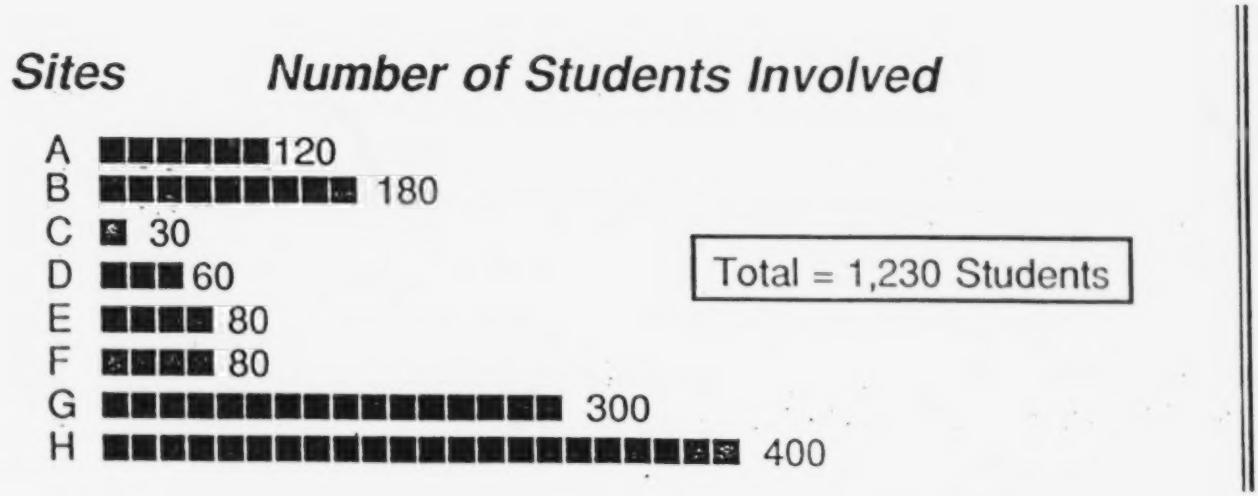

Fig. 2. Student participation in ENFI.

Class Participation Patterns

Two very important trends: two sites are studying whether women and members of minority groups participate more freely in online discussion than in a face-to-face setting and three other sites are studying whether there is greater retention among ENFI students. Preliminary indications are that ENFI interaction indeed does encourage normally reticent students to participate

more, but retention studies are just now getting under way so there is only the most scant data regarding this question so far.

Technical Support

There appears to be a couple of very significant trends in the evolution of ENFI at each site: first, the success of the entire project, no matter how well-planned and supported, seems to hinge on technical support. Where there is continued growth of the project, both in pedagogical and research uses, the institution itself produced and supports the software. At sites where outside vendor support is necessary, more problems and discontent crop up. [A technical note: where the interactive program itself has to carry all the burdens of group interaction (security, collision control, background programs, archiving, and so on), more chance for software and user error are introduced; where the program operates in an environment that takes over many of those functions, human-computer interaction is more likely to be trouble-free.]

A Campus Infrastructure

Secondly, beyond the technical support is the support of a campus infrastructure. Strong administrative support is essential since the financial cost is significant, the person taking the lead will need release time and, often, more room is required. In addition, you will probably have to create the new position of LAN manager if you don't already have one. Obviously, ENFI will fit in best where the campus is already computer-intensive, minimizing the number of adaptations necessary. From the human perspective, the lead person must enjoy the trust of his or her colleagues and that trust must result in good experiences with the equipment. Frequent workshops are important at the start.

From Theory to Practice

A key impetus for moving to ENFI mentioned by a number of respondents was the opportunity to move from theory to practice. They feel that the move to ENFI is a stronger move away from the traditional class than simply trying to do different things in the same classroom. Collaboration on the network produces a printout that can be used in the next stages of drafting. Also, group invention in writing seems more directly linked to the writing process than similar work in speech. And, teacher presence seems less imposing when working in a "virtual" environment (the computer network) than in the actual environment bounded by three walls and a blackboard. One respondent noted that writing on the network gets students accustomed to writing publicly and therefore makes them more open to peer comments. Another mentioned the new research opportunities for both teachers and graduate students.

Summary

Probably the four most important areas mentioned in the survey are:

* administrative concerns,
* caveats,
* educational impact,
* implications for the field.

1. Administrative concerns.

Positive aspects of ENFI are the apparent greater engagement in discussion experienced by women and minority groups, support of full-size classes, the suggestion that ENFI might encourage greater student retention (under study at the moment), the possibility of good public relations for the institution, application of technology in the humanities and increased teacher involvement in research.

The negatives are the large initial investment, the need for ongoing support and the difficulty of measuring any impact on student writing.

2. Caveats.

Some respondents mentioned their inability to get new teachers to try ENFI, their frustration at technical problems, the lack of compelling evidence that ENFI results in a change in student writing and the greater effort and hours required of an ENFI teacher.

3. Educational impact.

At the same time, most respondents said they saw hopeful signs in patterns of heavy use by students and teachers, increased teacher interest in their work, an increased level of research surrounding ENFI and the opportunity to test in a new way theories such as social constructionism.

4. Implications for the field.

Almost all respondents believed their work with ENFI would have an impact on our field by providing a new source of data (the printed transcript of online work) and a new view of the composing process. Some felt ENFI was a successful way of bringing more students actively into the work of the class and of making the teacher less the dominant player in all phases of composing. Several mentioned elevating the importance of peer commenting to nearly that of teacher commenting.

Final Comments

ENFI and similar approaches are now well established in American post-secondary education. ENFI can no longer be considered an experiment. However, while many signs indicate that the use of real-time conferencing will continue to expand, the lack of compelling data about impact on student writing is troubling. The Annenberg-funded five institution ENFI Consortium is now engaged in its summative evaluation and part of that evaluation is a two-pronged evaluation of impact on student writing. Results will be available by July, 1990

Running through all of the interviews was the sense of great commitment to overcoming the technological and human problems attendant to the move out of the traditional classroom and into the ENFI lab. Every respondent applauded the administrative support they've enjoyed. At the same time, it may be that the technology is not quite ready for our large-scale move to real-time conferencing.

It would be hard now to define ENFI. Each teacher is experimenting with different approaches that are appropriate to his or her students and teaching style, the curriculum and the technology they are using. Such diversity makes evaluation problematic since the number of variables is too numerous.

My own belief is that ENFI's impact on the field may be primarily in providing new ways to observe and document student composing strategies and behaviors. There are still significant gaps in our knowledge about the steps between thinking and drafting or between social group and individual drafting that ENFI may be able to help fill in. By working online in groups, students provide us with a convenient one-way window into their composing process. Therefore, the effect of ENFI may be two-dimensional: it may itself affect how students compose and may at the same time provide opportunities for ongoing monitoring to guide us in modifying the parameters and means we employ; in other words, it may support a more self-correcting approach than is possible in the traditional classroom where data gathering is both more intrusive and more work-intensive. Research in the ENFI writing classroom may be more the norm than the exception.

SURVEY OF ENFI SITES (This includes the question asked, though not follow-on questions, the results and summary comments on the results)

1. What is (are) the primary use(s) of ENFI or your network?

commenting: 4
sm-gr.coll: 4
proc-focus: 5
disp.mech.: 1
audience: 1

All stressed that there are many uses and that, where there are multiple teachers, even more varied uses are added. The newer sites are openly experimenting; there seems to be no notion of one "ENFI method," only clusters of opportunity.

2. What theoretical framework do you work within?

writing community
soc. constructionism
writ. proc.
shift to peer
collab. work
"experience"
Foucault; Jacobson (meta language): portable skills
Bruffee
Thinking Development through discourse.

Few had any ready answer; more a sense that ideas are in the air that seem to be applicable to computer network; one person said this is the first time we had ideas first and adapted machine to our use rather than other way around.

One stressed the development of "portable skills" where kids themselves get into discourse, use of meta language, so can leave class and not need continued teacher support -- cited Foucault and Jacobson.

Most noted shift of activity from teacher to student; emphasis on process. Some cited social constructionism.

3. How do classes using the network differ from regular classes?

Almost none have set up network classes any differently in terms of class size, hours, curriculum or objectives. However, to carry out curriculum and objectives, they noted how they've had to re-structure classroom activities. Only two sites mentioned a class size difference and in one case that was true of all computer classes, not just ENFI classes and in the other it would no longer be true in the fall of '89.

4. Are all network classes similar?

They said there are a variety of approaches; but training at some sites and a guide at another helps to create some uniformity; used in different courses at some sites (upper-level lit. or graduate courses); research design affects approach, too.

5. How many students/teachers are involved this semester?

From the ones I talked to (nine sites out of about 16 using ENFI with hearing students; deaf sites not surveyed): 1,230 students and 54 teachers. Presumably numbers will be much higher when survey of all sites is completed.

6. How long have you been doing this work? (when did ENFI start?)

3 years:	two
2 years:	five
first year:	two

7. Is there or will there be a summative evaluation?

Seven of nine sites said yes, a formal summative evaluation will be conducted; one said they will rely on regular student evaluation of courses; another said they only surveys usage patterns but may collate student evaluations from ENFI courses. Evaluation tends to focus as much on behavior (attendance, retention, teacher persistence, student and teacher attitudes) as on quality of writing.

8. What studies are you conducting, if any? Findings?

error patterns
paired WAC classes (Hist. and Pol. Sci.); affect on pre-writing
stand-alone and collab. invention compared
student comments about writing
data source for different research approaches
affect on participation by women
one site: numerous studies, not all ident.
changes in class discussion patterns (minorities and women)

In almost all cases, ENFI-like activities seem to spawn research, either because of the phenomenon itself or because it provides a new source of data.

9. Do you consider the experiment a success? if yes, in what way?

a.	unqualified yes:	four
b.	qualified affirm:	zero
c.	can't say:	three
d.	not/applicable	two (just starting)
e.	negative:	zero

Two of the four "unqualifieds" are relatively new to ENFI.

Reasons for not having ready answer:

technical difficulties preventing classes from meeting
can't get other teachers interested
too complex
too demanding
terribly expensive
value to students not documented

Reasons for unqualified yes:

receiving lots of inquiries within and without dept.
new research opportunities; providing dissertation opport.
the best way to have student conferencing
positive impact on faculty evaluation
way for college to work with high schools
students rate highly
good publicity for institution

The most significant finding here is probably that the long-running sites divided equally; the issue of technical support seemed to be the deciding factor. Where there was ample technical support, the sites reported "success." Where there had been technical problems, they were now dubious about recommending to others.

Also, the lack of convincing data that the students do better in an ENFI setting troubled at least one veteran.

At no sites was there any mention of retreat, however. No one reported shrinking use of networks.

A hopeful sign was the number of sites reported increased teacher involvement in research because of the move to ENFI.

10. Will the experiment expand? cease? stay static?

Four sites plan to expand the number of network stations;
Two sites expanded recently;
None is declining in numbers.

11. What support have you had from the adm?

five used superlatives to describe support
four said adm. is supportive

"they visit ENFI classes"
"strongly supportive"
"they're trying"
"excellent all down the line"
"terrific, unbelievable"

Clearly an initiative that almost always requires release time, increased funding, space and new support positions requires strong administrative support.

12. Where/how did you get funding? (that is, to start the project).

state: 2
inst.: 5
grant: 1
corp: 2

(one got both inst. and corp. funding)

The grant listed above did not pay for equipment but for a programmer's time.

13. What impact has ENFI or CSCW work had on your Department, Division or College?

2: all teachers in certain prog. encouraged to use
1: other departments are getting involved
1: integrated into curriculum
1: more teachers using than expected
1: potentially negative if tech. diff. not solved
1: lot of excitement and interest

Respondents were able to point to some specific impact in almost all cases but in general impact was stated in terms of patterns of teacher usage.

14. What importance does your work have for the profession?

The main importance seemed to be that ENFI allows theoretical ideas to be put to the test.
Also, it was noted that ENFI allows the institution to work with local high schools.
One said it helps us understand electronic text.
Another: provides better profile of remedial writer.

Here, the respondents mostly adopted a hopeful posture, noting that the ideas are getting out and they hope the ideas will have an impact.

15. How is your work viewed by your colleagues? What impact has this work had on you?

This was a mix of positives and negatives; for example, a couple said they are now working more hours than ever but enjoying it more. Half said their colleagues approve, the other half said their colleagues are skeptical (I'm the alchemist in the basement, one said). A couple said their evaluation by both students and administrators had improved but a couple others said

they worry more now (one can't sleep at night, the other is getting ulcers). A positive note sounded by many was that they collaborated more now with colleagues on and off campus.

16. What is your tech. setup?

There are now no Macintosh networks; two sites are developing Macintosh ability.

Three sites use their own program for interaction
Four use RealTime Writer
Two use Fox CB
Five have video-switching ability

Almost impossible to count machines; those available to students to use for some kind of ENFI activity at the nine sites is somewhere around 500, depending on how you count (a couple of campuses have their software on the campus network so potentially is available on hundreds of machines). The number of machines available is not mentioned as a problem. Technical problems are a far more serious problem.